

What is claimed is:

1. A method of measuring HLA-DR expression on the surface of human blood cells, comprising:  
    contacting a sample containing human blood cells with a lysosomotropic amine and an antibody specific for HLA-DR; and then  
    detecting the binding of said anti-HLA-DR antibody to said cells.
2. The method of claim 1, wherein said sample is unfractionated peripheral blood.
3. The method of either claim 1 or claim 2, wherein said lysosomotropic amine is selected from the group consisting of chloroquine, hydroxychloroquine, primaquine, and methylamine.
4. The method of claim 3, wherein said lysosomotropic amine is chloroquine.
5. The method of claim 3, wherein said lysosomotropic amine is hydroxychloroquine.
6. The method of either claim 1 or claim 2, wherein said anti-HLA-DR antibody is labeled with a fluorophore.
7. The method of claim 6, wherein said fluorophore is selected from the group consisting of PE, APC, FITC, and PerCP.

8. The method of claim 7, wherein said fluorophore is PE.

9. The method of claim 8, wherein said fluorophore is conjugated to said anti-HLA-DR antibody at a defined molar ratio.

10. The method of claim 9, wherein said ratio is 1:1.

11. The method of either claim 1 or claim 2, wherein said antibody binding is detected flow cytometrically.

12. The method of claim 11, wherein said lysosomotropic amine is chloroquine and said anti-HLA-DR antibody is conjugated to PE.

13. The method of claim 12, wherein said anti-HLA-DR antibody is conjugated to PE at a molar ratio of 1:1.

14. The method of either claim 1 or claim 2, wherein said detecting step further comprises detecting the binding of said anti-HLA-DR antibody to monocytes in said sample.

15. The method of claim 14, wherein said contacting step further comprises contacting with a monocyte-distinguishing antibody and said detecting step measures the binding of said anti-HLA-DR antibody to cells binding said monocyte-distinguishing antibody.

16. The method of claim 15, wherein said monocyte-distinguishing antibody is specific for CD14.

17. The method of claim 16, wherein said anti-CD14 antibody is conjugated to the PerCP moiety of a PerCP/CY5.5 tandem fluorophore.

18. The method of claim 17, wherein said anti-HLA-DR antibody is conjugated to a fluorophore whose emission spectrum is flow cytometrically distinguishable from PerCP/CY5.5.

19. The method of claim 18, wherein said anti-HLA-DR antibody is conjugated to PE.

20. The method of claim 19, wherein said anti-HLA-DR antibody is conjugated to PE at a defined molar ratio.

21. The method of claim 20, wherein said ratio is 1:1.

22. The method of claim 19, wherein said lysosomotropic amine is chloroquine.

23. The method of claim 19, wherein said lysosomotropic amine is hydroxychloroquine.

24. The method of claim 22, wherein said antibody binding is detected flow cytometrically.

25. The method of claim 2, further comprising the step, after said contacting step and before said detecting step, of: lysing the erythrocytes in said peripheral blood sample.

26. The method of claim 24, further comprising the step, after said contacting step and before said

detecting step, of: lysing the erythrocytes in said peripheral blood sample.

27. The method of claim 25, further comprising the step, after said lysing step and before said detecting step, of removing lysis debris.

28. The method of claim 26, further comprising the step, after said lysing step and before said detecting step, of removing lysis debris.

29. In a method of measuring HLA-DR surface expression on human peripheral blood monocytes, the improvement comprising: contacting said monocytes with chloroquine prior to or concurrently with contacting said cells with an anti-HLA-DR antibody.

30. In a method of measuring HLA-DR surface expression on human peripheral blood monocytes, the improvement comprising: contacting said monocytes with an anti-CD14 antibody conjugated to the PerCP moiety of a PerCP/CY5.5 tandem dye molecule.

31. A method of assessing the immune status of a human patient, comprising:

contacting a sample containing said patient's blood cells with a lysosomotropic amine and an antibody specific for HLA-DR;

detecting the binding of said anti-HLA-DR antibody to the monocytes in said sample; and then

comparing the level of binding so detected with that so detected from human controls.

32. The method of claim 31, wherein said lysosomotropic amine is selected from the group consisting of chloroquine and hydroxychloroquine.

33. The method of claim 32, wherein said contacting step further comprises contacting said sample with a monocyte-distinguishing antibody, and said detecting step measures the binding of said anti-HLA-DR antibody to cells binding said monocyte-distinguishing antibody.

34. The method of claim 33, wherein said monocyte-distinguishing antibody is anti-CD14-PerCP/CY5.5.

35. A method of determining the suitability of immunostimulatory therapy in a patient with sepsis, comprising:

contacting a sample containing said patient's blood cells with a lysosomotropic amine and an antibody specific for HLA-DR;

detecting the binding of said anti-HLA-DR antibody to the monocytes in said sample;

comparing the level of binding so detected with that detected from normal controls, wherein patients with binding lower than control are determined to be suitable for said treatment.

36. A method of determining the suitability of immunostimulatory therapy in a patient with sepsis, comprising:

contacting a sample containing said patient's blood cells with a lysosomotropic amine and an antibody specific for HLA-DR;

quantitating the binding of said anti-HLA-DR antibody to the monocytes in said sample; wherein patients averaging fewer than 5000 anti-HLA-DR antibodies per monocyte are determined to be suitable for said treatment.

37. The method of claim 36, wherein patients averaging fewer than 3000 anti-HLA-DR antibodies per monocyte are determined to be suitable for said treatment.

38. The method of claim 37, wherein patients averaging fewer than 3000 anti-HLA-DR antibodies per monocyte over two consecutive days are determined to be suitable for said treatment.

39. A composition for flow cytometric measurement of HLA-DR on human peripheral blood cells, comprising:  
a fluorophore-conjugated anti-HLA-DR antibody, and  
a lysosomotropic amine.

40. The composition of claim 39, wherein said lysosomotropic amine is selected from the group consisting of chloroquine, hydroxychloroquine, primaquine, and methylamine.

41. The composition of claim 40, wherein said lysosomotropic amine is chloroquine.

42. The composition of claim 40, wherein said lysosomotropic amine is hydroxychloroquine.

43. The composition of claim 39, wherein said fluorophore is PE.

44. The composition of claim 43, wherein said PE fluorophore and said antibody are conjugated at a defined molar ratio.

45. The composition of claim 44, wherein said ratio is 1:1.

46. The composition of claim 39, further comprising: a monocyte-distinguishing antibody conjugated to a fluorophore.

47. The composition of claim 46, wherein said monocyte-distinguishing antibody is specific for CD14.

48. The composition of claim 47, wherein the fluorophore conjugated to said anti-CD14 antibody is flow cytometrically distinguishable from the fluorophore conjugated to said anti-HLA-DR antibody.

49. The composition of claim 48, wherein said anti-HLA-DR antibody is conjugated to PE and said anti-CD14 antibody is conjugated to the PerCP moiety of a PerCP/CY5.5 tandem molecule.

50. The composition of claim 49, wherein said lysosomotropic amine is chloroquine.

51. A kit for flow cytometric measurement of HLA-DR on the surface of peripheral blood cells, comprising:  
a composition according to claim 39, and  
an erythrocyte lysing composition.

52. A kit for flow cytometric measurement of HLA-DR on the surface of peripheral blood cells, comprising:  
a composition according to claim 47, and  
an erythrocyte lysing composition.

53. A kit for flow cytometric measurement of HLA-DR on the surface of peripheral blood cells, comprising:  
a composition according to claim 50, and  
an erythrocyte lysing composition.

54. The kit according to claim 51, further comprising:  
pelletized beads conjugated with defined levels of PE.

55. The kit according to claim 53, further comprising:  
pelletized beads conjugated with defined levels of PE.

56. A monocyte-specific immunoconjugate, comprising:  
an anti-CD14 antibody conjugated to the PerCP moiety of  
a PerCP/CY5.5 tandem dye molecule.

57. The immunoconjugate of claim 56, wherein said  
anti-CD14 antibody is LeuM3.

58. A method of measuring CD11b expression on the  
surface of human blood cells, comprising:  
contacting a sample containing human blood cells  
with a lysosomotropic amine and an antibody specific  
for CD11b; and then  
detecting the binding of said anti-CD11b antibody  
to said cells.

59. The method of claim 58, wherein said sample is  
unfractionated peripheral blood.



60. The method of either claim 58 or claim 59, wherein said lysosomotropic amine is selected from the group consisting of chloroquine, hydroxychloroquine, primaquine, and methylamine.

61. The method of claim 60, wherein said lysosomotropic amine is chloroquine.

62. The method of claim 60, wherein said lysosomotropic amine is hydroxychloroquine.

63. The method of either claim 58 or claim 59, wherein said anti-CD11b antibody is labeled with a fluorophore.

64. The method of claim 63, wherein said fluorophore is selected from the group consisting of PE, APC, FITC, and PerCP.

65. The method of claim 64, wherein said fluorophore is PE.